

## Abstract

High-speed imaging by a propeller MRI method is enabled as a whole thanks to high-speed computation by preventing an aliasing artifact even if the echoes acquired by one blade are decreased and by reducing the imaging time and the computational complexity. In a magnetic resonance imaging apparatus, an RF pulse is applied to a subject placed in a static magnetic field, a plurality of gradient magnetic fields are applied, and induced nuclear magnetic resonance signal (echo signal) is received by means of a multiple RF receiving coil unit composed of two or more RF receiving coils.

A parallel MRI method is applied to echo signals acquired by reducing the echoes per blade of a propeller MRI method so as to remove the artifact to produce a reconstructed image. The reconstructed image is subjected to inverse Fourier transform to return it to the echo signals in a measurement space corresponding to the blade.

The echo signals are girded in an arbitrarily predetermined coordinate system for image and combined.

Such a processing is conducted for the echo signals of all the blades. A final image is reconstructed using the echo signals after the image creation in the coordinate system for image.